REMARKS

This response is intended as a full and complete response to the non-final Office Action mailed November 16, 2006. In the Office Action, the Examiner notes that claims 32-44 are pending and rejected. By this response, Applicants have amended claims 32 and 40 to further clarify Applicants' invention.

In view of the foregoing amendments and the following discussion, Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, Applicants believe that all of these claims are now in allowable form.

It is to be understood that Applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to Applicants' subject matter recited in the pending claims. Further, Applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant response including amendments.

REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

Claims 32-44

The Examiner has rejected claims 32-44 under 35 U.S.C. §103(a) as being unpatentable over Mao et al. (U.S. 6,886,178, hereinafter "Mao") In view of Wu et al. (U.S. 6,594,271, hereinafter "Wu") and further in view of O'Loughlin et al. (U.S. 6,185,635, hereinafter "O'Loughlin"). Applicants respectfully traverse the rejection.

As set forth below, Applicants submit that there is no motivation to combine Mao with Wu; and even if combined, Mao, Wu and O'Loughlin, singly or in combination, fail to teach or suggest Applicants' invention as a whole.

Applicants have amended independent claims 32 and 40 to further clarify that the multiplexed output stream is adapted for transport to the subscriber. The amendment is supported by at least the following sections in the original specification, e.g., Figs.1-3,

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page 3, lines 24-28 and page 6, lines 22-24. Thus, no new matter has been added by these amended claims.

The amended claim 32 recites an information distribution system comprising server equipment that comprises, in part:

> "a multiplex switch for multiplexing a plurality of formatted content data from server modules to produce an output stream that is adapted for transport to the subscriber equipment via a communication channel, wherein said multiplexing of said formatted content data is statistically performed; said multiplex switch comprises a converter module for formatting non-content data and a switching module for selectively multiplexing formatted non-content data into said output stream, wherein said multiplexing of formatted non-content data is on a future bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams; and
>
> a transport processor coupled to the multiplex switch for receiving the output stream from the multiplex switch and for transmitting to the multiplex switch reverse data channel information received via a reverse data channel." (Emphasis added.)

Independent claim 40 recites, a method of providing data to subscriber comprising, in part:

> "statistically multiplexing a plurality of formatted content streams to produce an output stream that is adapted for transport to the subscriber via a communication channel;
>
> formatting non-content data to fit the output stream;
>
> predicting future bandwidth availability based on the statistical multiplexing of the formatted content streams;
>
> selectively multiplexing formatted non-content data into said output stream on a future bandwidth availability basis; and
>
> receiving reverse data channel information." (Emphasis added.)

As stated in the Office Action, Mao does not disclose, among others, "multiplexing of formatted non-content data on a future bandwidth availability basis".

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Thus, Wu's process of bandwidth allocation using the Opportunistic Data Processor (ODP) is relied on as teaching this missing feature.

Applicants disagree that there is any motivation to combine this teaching of Wu with Mao, and furthermore, the combined teaching would be contrary to what is intended in Mao.

For example, Mao teaches that three tables contained in a control map, i.e., non-content data, are needed in order to allow a viewer to navigate among the broadcast and simulcast HTML pages (e.g., Mao, col. 3, lines 42-59). Specifically, a master control map, the HTML Program Association Table (HPAT), which defines the locations of two other tables (HPMT and HEIT), is found in a predetermined data packet within a MPEG-2 data stream (e.g., Mao, col. 3, lines 62-67). Since this table has to be provided in a predetermined data packet, it is unlikely that Wu's control map data can be multiplexed on an opportunistic basis based on future bandwidth availability. That is, there is no motivation to combine Mao with Wu's bandwidth allocation with the ODP.

Further support can be found in Mao, col. 6, lines 60-65, which teaches that "[o]nce the headend 10 has all the information necessary relating to simulcast and broadcast Web pages, computer 32 generates the control map, the HTML pages and the URLs for insertion into the industry standard transport layer of the MPEG-2 protocol" In connection with Fig. 5, which shows a MPEG-2 data stream 510 containing the non-content data (e.g., tables HPAT, HPMT and HEIT) and the associated content data (e.g., the broadcast HTML and simulcast HTML), Mao teaches that, to navigate to the desired HTML page, "the settop first finds the HPAT (at a predetermined MPEG-2 location, for example, PID=0x1f00)" (col. 7, lines 41-43). The other tables can then be located and used to find desired broadcast or simulcast Web pages.

Thus, according to Mao, the non-content and content data are provided in the same output stream, with the HPAT being at a predetermined location. It would be contrary to Mao's teaching if the multiplexing of non-content data were to be modified according to a future bandwidth availability basis. Therefore, Applicants submit that there is no motivation to combine the teachings of Mao with Wu.

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The Office Action also stated that Mao in view of Wu does not specifically disclose a transport processor coupled to multiplex switch for transmitting to the multiplex switch reverse data channel information received via a reverse data channel.

Thus, O'Loughlin, Figs. 1-5 and col.6, line 52 - col. 9, line 54 were cited as disclosing a transport processor (i.e., data transport system 12) "coupled to multiplexer switch for transmitting to the multiplexer switch reverse data channel information received via a reverse data channel." Alternatively, O'Loughlin's multiplexers 18, 24 and 26 are also cited as corresponding to Applicants' converter module for formatting non-content data and switching module for selectively multiplexing formatted non-content data.

Applicants disagree with such characterization of O'Loughlin. The cited portions of O'Loughlin disclose a data transportation environment divided into consumer and public carrier sections, with consumers being connected to respective bidirectional multiplexers 18, 24 or 26 (or via servers/routers in local area networks) in the public carrier section, based on different bandwidth requirements. Multiplexers 18 and 24 are lower speed/channel segment converters, while multiplexer 26 is a high speed/lower speed converter that interfaces between data transport system 12 and either multiplexers 18, 24 in the public carrier section or servers/routers in the consumer section.

However, there is no teaching or suggestion that these multiplexers are used as converters for formatting non-content data or for selectively multiplexing the non-content data into an output data stream for transport to the subscriber equipment, as provided in Applicants' invention.

Furthermore, even if O'Loughlin's data transport system 12 and one of multiplexers 26, 18 or 24 were interpreted as analogous to Applicants' transport processor and multiplex switch, the arrangement of O'Loughlin's components are different from Applicants' claimed invention.

Specifically, Applicants' server equipment provides data to subscriber equipment. As such, the multiplex switch is configured such that its multiplexed output (content and

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non-content data) is provided to the transport processor <u>for distribution to subscriber equipment</u>. That is, the multiplex switch is provided "upstream" of the transport processor.

By contrast, O'Loughlin's multiplexer 26 provides multiplexed data <u>from the consumer equipment</u> (e.g., Fig. 1 - data consumers 40, 46, 56, and server/routers 38, 44, 50) <u>to the data transport system 12 in the public carrier section</u>. Unlike Applicants' invention, multiplexer 26 is located "downstream" of the transport system 12.

Therefore, even if O'Loughlin were to be combined with Mao and Wu, one would not have arrived at Applicants' invention, as recited in either claim 32 or 40.

Thus, Mao, Wu and O'Loughlin, singly or in combination, fail to teach or suggest the invention <u>as a whole</u>. As such, Applicants submit that independent claims 32 and 40 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

Furthermore, claims 33-39 and 41-44 respectively depend from independent claims 32 and 40 and recite additional limitations thereof. As such, and at least for the same reasons as discussed above, Applicants submit that these dependent claims are also not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the Examiner's rejections be withdrawn.

CONCLUSION

Thus, Applicants submit that none of the claims presently in the application, are obvious under the provisions of 35 U.S.C. §103. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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